

The opinion in support of the decision being entered today was not written for publication and is not binding precedent of the Board

Paper No. 16

UNITED STATES PATENT AND TRADEMARK OFFICE

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BEFORE THE BOARD OF PATENT APPEALS  
AND INTERFERENCES

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Ex parte HIROAKI TAKASU,  
JUN OSANAI and KENJI KITAMURA

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Appeal No. 1999-1088  
Application 08/689,867

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ON BRIEF

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Before THOMAS, JERRY SMITH, and LEVY, Administrative Patent Judges.

THOMAS, Administrative Patent Judge.

DECISION ON APPEAL

Appellants have appealed to the Board from the examiner's final rejection of claims 5 through 24 and 27 through 30. Representative claim 27 is reproduced as follows:

27. A semiconductor design comprising:

a plurality of first electric conductors;

a first insulating film overlying said plurality of first electric conductors;

a plurality of polysilicon thin film resistors overlying said first insulating film, each of said resistors having two ends, and each of said resistors overlying a respective one of said first electric conductors, with said resistors being disposed along a line with said resistors being spaced from one another along the line and said two ends of each of said resistors being spaced apart along the line;

first conducting means connected to said ends of said resistors for connecting said resistors together in series; and

a plurality of first connecting means conductively connecting each of said first electric conductors to one said end of the respective overlying one of said resistors so that each of said first electric conductors is at the same potential as the respective one of said resistors.

The following references are relied upon by the examiner:

MacElwee	5,296,726	Mar. 22, 1994
Furuya et al. (Furuya)	5,428,242	June 27, 1995
Tasaka	5,490,106	Feb. 6, 1996

Mead et al. (Mead), Introduction To VLSI Systems, Addison-Wesley Publishing Company, pp. 5-6 (1980).

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Claims 5 through 24 and 27 through 30 stand rejected under 35 U.S.C. § 103. As evidence of obviousness, the examiner relies upon Mead in view of Furuya, MacElwee and Tasaka.

Rather than repeat the positions of the appellants and the examiner, reference is made to the brief and the answer for the respective details thereof.

#### OPINION

We reverse.

The essence of the disclosed and claimed invention is believed to be most succinctly stated in the paragraph bridging pages 36 and 37 of the specification as filed which states that "according to the present invention, the resistance value of respective polysilicon resistors is held correctly by making potentials of respective resistors themselves and electric conductors located thereabove and thereunder equal to each other." The architecture to achieve these functional features is set forth at least in disclosed Figures 1 and 2. This quoted summary of the disclosed invention is consistent with the subject matter of independent claim 27 on appeal (and more awkwardly recited in independent claim 30 on appeal) by the interconnectability of the claimed plurality of first

electric conductors, the plurality of polysilicon thin film resistors in series with the respective first conductive means, and the plurality of first connecting means "so that each of said first electric conductors is at the same potential as the respective one of said resistors."

If we assume for the sake of argument that the examiner's rejection is proper within 35 U.S.C. §103 and that the references are properly combinable with each other within 35 U.S.C. §103, we have concluded that the subject matter of independent claims 27 and 30 on appeal would not have been met or achieved. The claimed interconnectability of the recited elements noted in the preceding paragraph so that they would be at the same electric potential would not have been achieved since the combined teachings of the references relied upon either achieved interconnectability to a common potential of overlying or underlying conductors with respect to polysilicon thin film resistors, but not necessarily both.

Our basic problem, however, with the examiner's position is that we do not agree with the examiner that a prima facie case of obviousness has been established by the applied prior art. The relevance of Mead to the claimed invention is hard to see until we consider the teachings of MacElwee which indicates in prior art Figure 1 that polysilicon

thin film resistors were known in the art of comparable construction to that which has been claimed, but the teachings of which have been utilized in the Figure 2 embodiment of MacElwee to achieve series connected field effect transistors. Mead is therefore cumulative as to the teaching value of Figure 3 of MacElwee anyway. On the other hand, Furuya generally teaches the conductive shielding either above or below or above and below the polysilicon resistive element is/are utilized to shield it, yet the shielding element or elements do not become a part of or are electrically connected to the respective polysilicon resistive element in each of the embodiments in Furuya as is required by the claims on appeal. Even if we were to consider that Furuya's teachings of shielding a polysilicon resistive element either above or below it or both, we do not conclude, and we are persuaded that the artisan would not necessarily conclude, that the shielding elements of Furuya and the polysilicon resistive elements themselves even as exemplified in MacElwee, would have been connected in such a manner as to be the same electric potential as claimed. We do not see how the alleged teaching value of Tasaka placing various field effect transistors in a substrate below a resistive type channel would have modified the above teachings of the other references to have arrived at the subject matter of the claimed invention.

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Although we agree with the examiner's basic position that the four references relied upon contain analogous teachings since MacElwee teaches in a comparative sense between prior art Figure 1 and Figure 2 of his patent the analogousness of polysilicon thin film resistors and a somewhat similar architecture to the formation of field effect transistors used as resistive elements, so much speculation is necessary in our view to have arrived at the subject matter of the claimed invention that it appears to us that the examiner has exercised prohibited hindsight in the formulation of the rejection, let alone providing sufficient evidence to persuade us that the artisan would have found obvious the subject matter of independent claims 27 and 30 on appeal based upon the applied prior art.

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In view of the foregoing, we conclude that the subject matter of claims 5 through 24 and 27 through 30 would not have been obvious to the artisan within 35 U.S.C. § 103 based upon the applied prior art. Therefore, the decision of the examiner rejecting these claims under 35 U.S.C. §103 is reversed.

REVERSED

James D. Thomas	)	
Administrative Patent Judge	)	
	)	
	)	
	)	BOARD OF PATENT
Jerry Smith	)	
Administrative Patent Judge	)	APPEALS AND
	)	
	)	INTERFERENCES
	)	
Stuart S. Levy	)	
Administrative Patent Judge	)	

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